

### **REMARKS/ARGUMENTS**

Reconsideration of this application is requested. Claims 1-10 are in the application of which claims 7 and 8 have been withdrawn from consideration.

#### **Discussion of Claim Amendments/New Claims**

Claim 1 has been amended in order to more particularly point out and distinctly claim that which applicants regard as their invention and, in particular, to define the insulating layer in structural terms. In the outstanding Official Action the examiner has construed claim 1 to be a "product-by-process" claim. This is not correct – claim 1 is directed to an article per se. In order to reinforce this claim 1 has been amended to adopt terminology that is specific to the structural aspect of the product being claimed.

Claim 1 includes the recitation that the heat seal tape is adhered with an adhesive material which has increased adhesiveness at a temperature in the range of 60 to 120°C. This is based upon page 9, line 7 of the description.

New claim 9 has been added and is directed to preferred aspects of the disclosure, in particular a listing of hot melt resins as described at page 8, last two lines of the description. New claim 10 specifies adhesive materials which increase in their adhesiveness at 60 to 120°C.

The amendments to claim 1 and added claims 9 and 10 are proposed to advance examination of this application and to better define the invention. Basis for the changes made to claim 1 and the text of new claims 9 and 10 are as pointed out above, thus they are not directed to added subject matter. Favorable consideration of these claims is requested.

#### **Response to Prior Art-Based Rejections**

The Official Action includes two prior art-based rejections both asserting anticipation or nonobviousness over a single reference; *see* item 4 for Yamashita U.S. 6,387,564 and item 5 regarding the same claims over a published Japanese application to Nakai. Applicants have carefully reviewed the disclosures of both of these documents and cannot agree that their claims are anticipated by or rendered obvious over the disclosures of either of these documents, particularly in light of the claim amendments and new claim 9 presented above.

Regarding Yamashita et al

Yamashita et al discloses procedures for preventing particles of active material falling from a part at least of one end face at least of either positive pole active material layers or negative pole active material layers coated with an insulating material particle aggregate layer in which the insulating material particles are bonded with binders.

At column 18, lines 40-60, Yamashita et al disclose that the aggregation layer of insulating material particles applied as coating or a film to the exposed electrode collector portion may be formed to prevent a short circuit. The exposed electrode collector portion includes a portion where a part of the positive electrode uncoated with the positive electrode mixture is opposed to a part of the negative electrode coated with the negative electrode mixture.

The passage at column 3, lines 12-20, referred to by the examiner, does not suggest the structure of Figures 1A and 1B of the present application because the passage does not describe the existence of a portion where an exposed part of a positive electrode collector opposes to a negative electrode active material layer.

However, Yamashita et al does include information possibly relating to the invention of the present application at Figures 8(a), 8(b), 10, 11 and at column 18, lines 40-60 not mentioned in the current Action.

At column 18, lines 40-60, it is indicated that an aggregation layer of insulating material particles which corresponds to a separator of the present invention is coated to a current collector exposed portion for fixing a tab. And it is also indicated that an insulation film instead of an aggregation layer of insulating material particles may be cut out and stuck to the current collector exposed portion. It would appear that Yamashita et al suggests the existence of the aggregation layer of insulating material particles or the insulation film at the portion where an exposed part of the positive electrode collector opposes to the negative electrode active material layer.

Considering the above, it will be apparent that materials coated with an exposed part of a positive electrode collector are different as between the present invention and Yamashita et al.

The present invention as defined in the amended claims shows it is possible to increase production efficiency by decreasing the cleaning frequency of the equipment needed during a manufacturing process by preventing adherence of adhesive material to a slitter blade at the slitting stage of a tape during the battery manufacturing process.

As for the present invention, it is possible to provide a battery of low environmental load due to a simplified manufacturing process that does not require evaporation to dry an organic solvent during the manufacturing process of the battery.

Yamashita et al disclose a resin coating of the aggregation layer of insulating material particles and simple stacking of an insulation film. However, in order to manufacture a battery of this type of construction, a process of drying the active solvent after resin coating is needed and this drying results in a more complicated manufacturing process and an increase in environmental loads. Yamashita et al does not specify any particular adhesive material for an insulating film, and therefore it is considered that Yamashita et al would use an insulating film applied with a normal adhesive material. And with the use of such an adhesive film, the adhesive is likely to stick to the manufacturing equipment during the battery manufacturing process and this, in turn, results in a decrease in production efficiency.

As explained above, the present invention provides excellent working effects and it has novelty and non-obviousness over Yamashita et al.

Regarding Nakai et al

Nakai et al discloses that the weight energy density value of a battery is improved by using a film or a sheet both made of resin as a material for an electrode collector and applied metal evaporation on its surface instead of using a metallic foil which is used in normal case as a charge collector formed with a positive-active-material layer at an electrode plate of the battery.

Attached, for the completion of the record and to gain a more accurate understanding of its content, is an English translation of the passage from [0007] to [0009] of Nakai (JP 09-213338) which is more precise than that of the Patent Abstracts of Japan "machine" translation.

It is clear that Nakai et al neither discloses nor suggests the existence of a portion where a part of a positive electrode uncoated with a positive electrode mixture opposes to a part of a negative electrode coated with a negative electrode mixture and that the film made of resin is covered with the metal evaporation layer. Thus it is considered that a battery of the type described in Nakai et al would not provide an effect as an insulating layer.

It will be apparent from the above observations the construction of the batteries as between the present invention and Nakai et al are quite different from each other and as such Nakai constitutes non-analogous prior art.

MIYAMOTO et al  
Appl. No. 10/781,948  
October 16, 2006

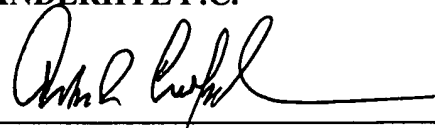
In summary, neither of the applied documents disclose or suggest a structure which would include an insulating layer as illustrated, for instance, in Figures 1A and 1B of the present application under reference number 100. This is a structural aspect of applicants' disclosure and claims as well and there appears to be no counterpart structure in either of the applied references.

Reconsideration and favorable action are solicited. Should the examiner require further information, please contact the undersigned.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: \_\_\_\_\_



Arthur R. Crawford  
Reg. No. 25,327

ARC:eaw  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100